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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: LANKHORST *et al.* Examiner: Lee, E.  
Serial No.: 10/539,251 Group Art Unit: 2815  
Filed: June 15, 2005 Docket No.: NL030259US1  
Title: ELECTRIC DEVICE COMPRISING PHASE CHANGE MATERIAL

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RESPONSE TO OFFICE COMMUNICATION

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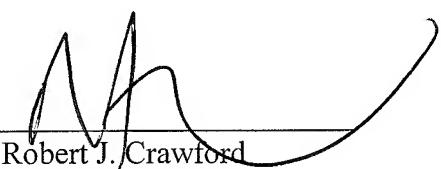
Dear Sir:

This paper is submitted in response to the Office Communication dated March 9, 2010, to provide an updated summary of claimed subject matter for the Appeal Brief filed on January 12, 2009. An updated summary of claimed subject matter follows at page 2 of this paper, in which references to supporting text in the specification have been updated to indicate line and page numbers corresponding to paragraphs as listed in the Appeal Brief. In accordance with M.P.E.P. § 1205.03 and 37 C.F.R. § 41.37(d), Applicant requests entry of the attached summary of claimed subject matter for the above-referenced Appeal Brief.

Appellant's Deposit Account No. 50-4019 (NL030259US1) was charged the requisite Appeal Brief fee. While no further charges should be necessary, authorization is given to charge the above account in support of this filing.

*Please direct all correspondence to:*

Corporate Patent counsel  
NXP Intellectual Property & Standards  
1109 McKay Drive; Mail Stop SJ41  
San Jose, CA 95131

By:   
Robert J. Crawford  
Reg. No.: 32,122  
Eric J. Curtin  
Reg. No.: 47,511  
651-686-6633  
(NXPS.443PA)

**V. Summary of Claimed Subject Matter**

Appellant's invention is related to a semiconductor device having a resistor value that is operable in different states based upon a phase change material.

Commensurate with independent claim 1, an example embodiment of the present invention is directed to an electric device with a body having a resistor including a fast growth phase change material (*see, e.g.*, FIG. 1 and page 10, lines 10-24). The phase change material is changeable between a first phase and a second phase via crystallization initiating at an interface between crystalline and amorphous materials (*see, e.g.*, page 3, lines 9-15). The resistor has an electric resistance that depends on whether the phase change material is in the first phase or the second phase, and is configured to conduct a current for enabling a transition from the first phase to the second phase (*see, e.g.*, page 3, lines 16-27).

Commensurate with independent claim 18, another example embodiment is directed to an electric device comprising a crystallization layer, a fast growth phase change material and a resistor (*see, e.g.*, FIG. 1 and page 10, lines 10-24). The fast growth phase change material is on the crystallization layer and changeable from an amorphous phase to a crystallization phase in response to an electrical pulse, by crystallization initiating at an interface with the crystallization layer (*see, e.g.*, page 3, lines 9-15). The resistor includes the fast growth phase change material and has an electric resistance that depends on the phase of the phase change material.